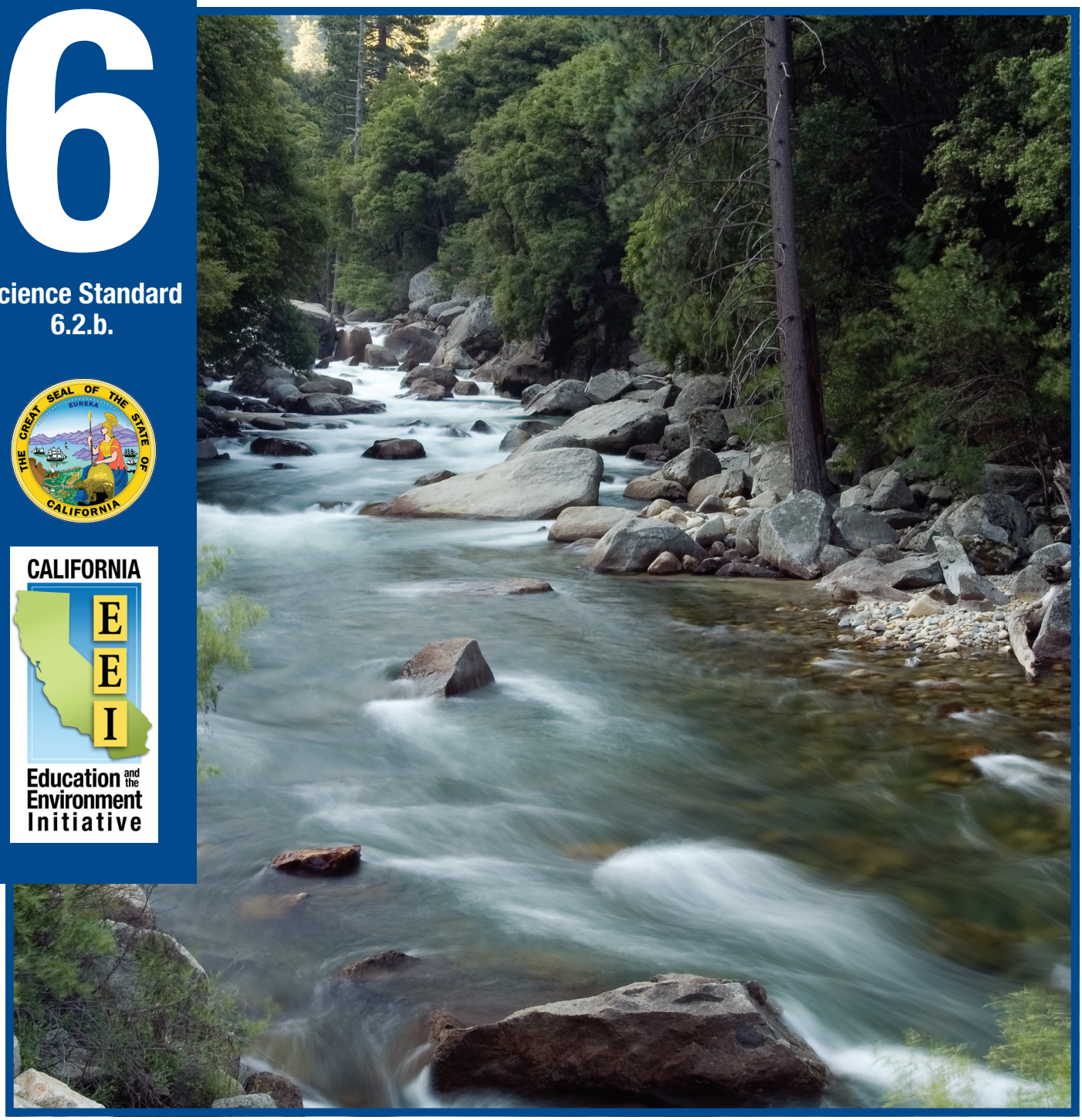
Visual Aids

California Education and the Environment Initiative

6

Science Standard
6.2.b.



The Dynamic Nature of Rivers

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency

California Natural Resources Agency

Office of the Secretary of Education

California State Board of Education

California Department of Education

California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

Linda Adams, Secretary, California Environmental Protection Agency

Patty Zwarts, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency

Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency

Mark Leary, Executive Director, California Integrated Waste Management Board

Mindy Fox, Director, Office of Education and the Environment, California Integrated Waste Management Board

Key Partners:

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Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

Office of Education and the Environment

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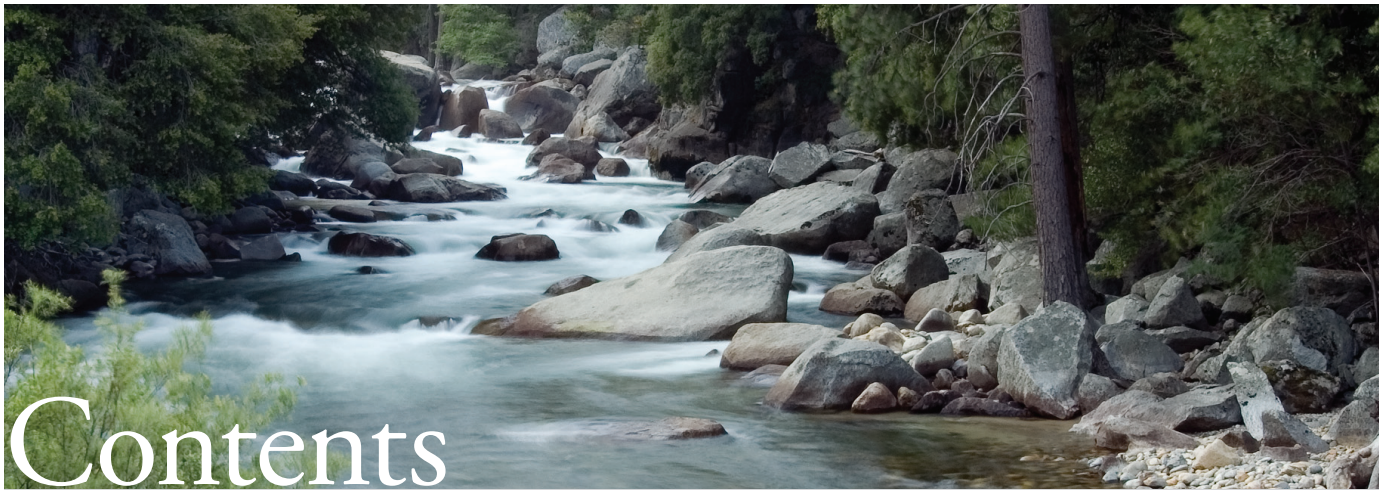
http://www.calepa.ca.gov/Education/EEI/



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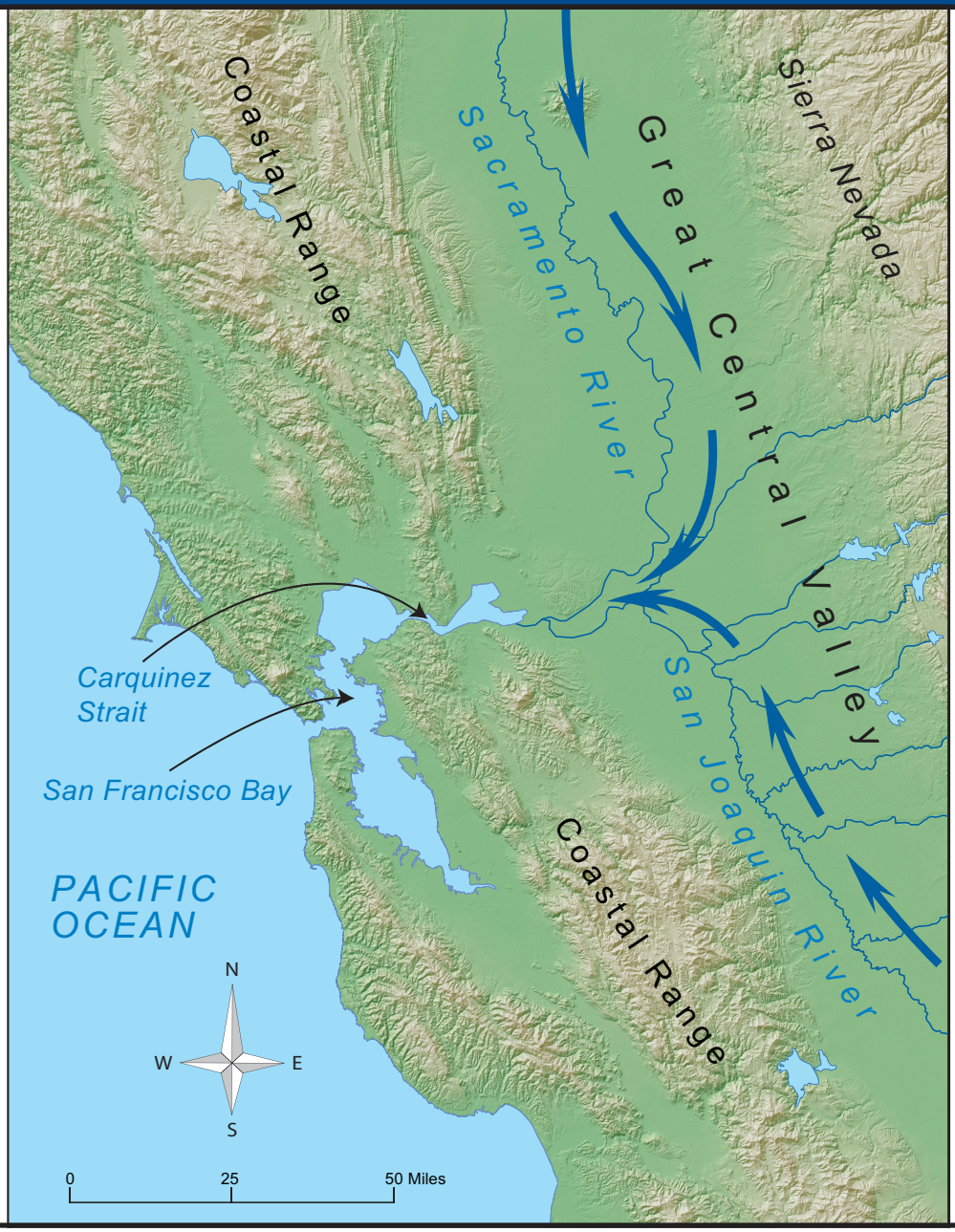
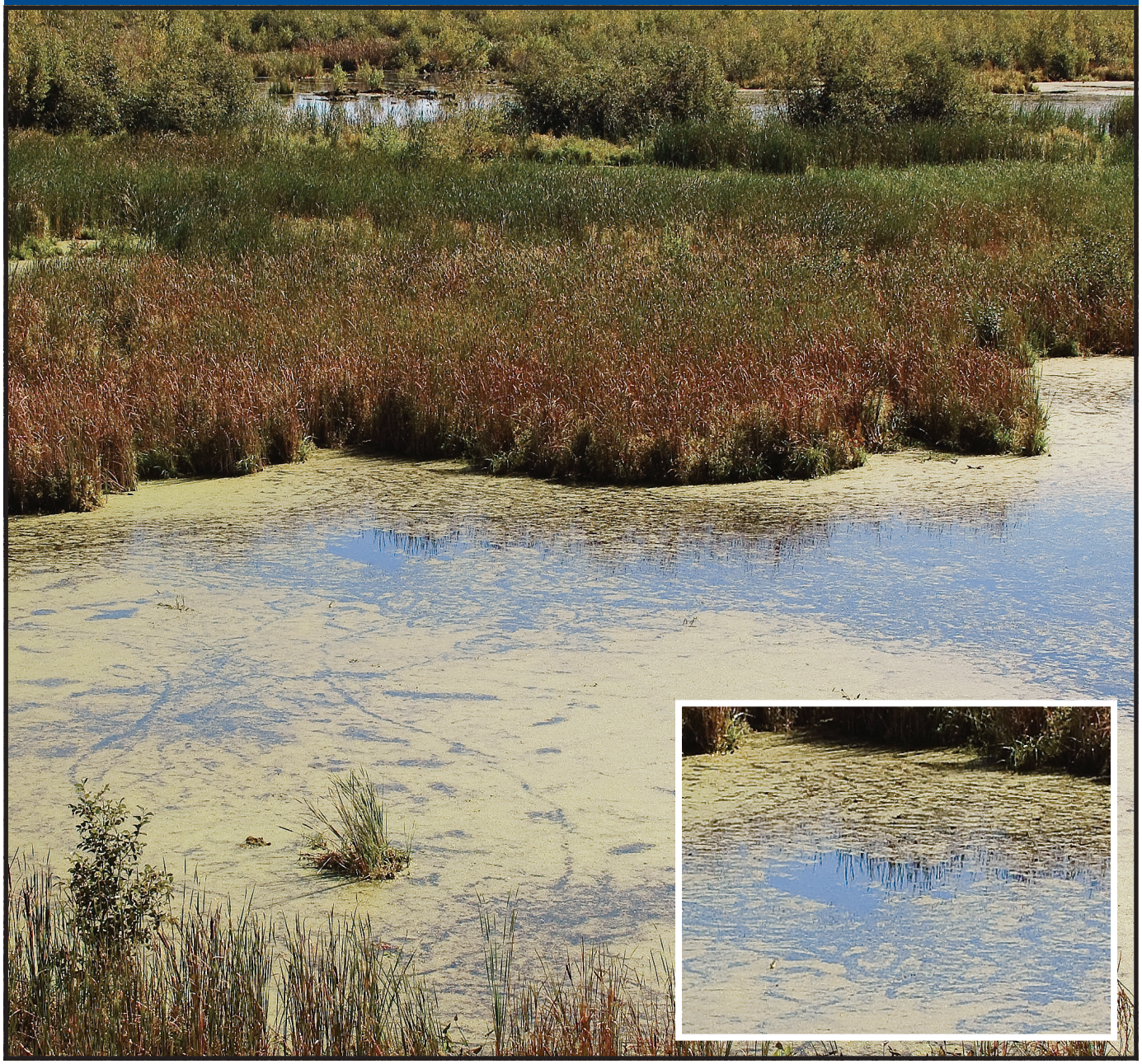
Lesson 5 Flow and Flooding: River Control

VA #1 The Sacramento-San Joaquin River Delta



VA #2 Mountain Stream

VA #3 Delta Slough



VA #4 The Benefits of Rivers: Irrigation

VA #5 The Benefits of Rivers: Recreation

VA #6 The Benefits of Rivers: Soil Renewal

VA #7 The Benefits of Rivers: Power Generation

VA #8 The Benefits of Rivers: Transportation

VA #9 The Benefits of Rivers: Fish and Wildlife

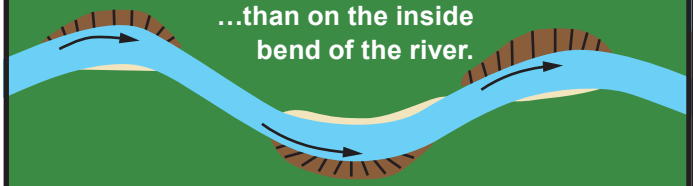
VA #10 The Benefits of Rivers: Drinking Water

VA #11 Meandering River

VA #12 Erosion and Deposition

The water in a river channel flows faster round the outside bend of a river…

…than on the inside bend of the river.



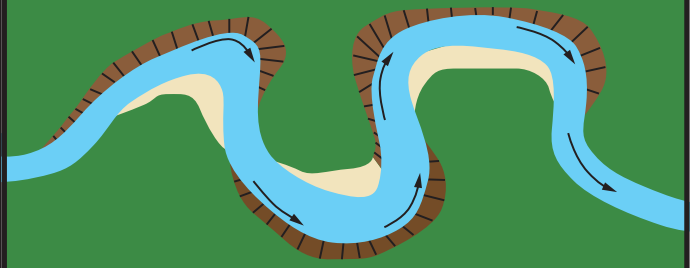
Faster flowing water on the outside bend erodes the river bank.

Slow moving water deposits sand and mud on the inside bend.

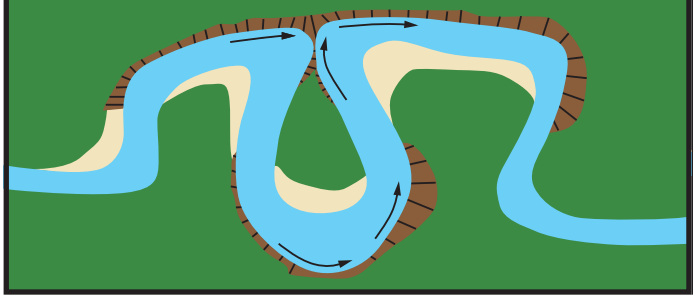
Where the river bank is being eroded, a steep river cliff is created.

The deposited sand and mud creates a river beach or slip-off slope.

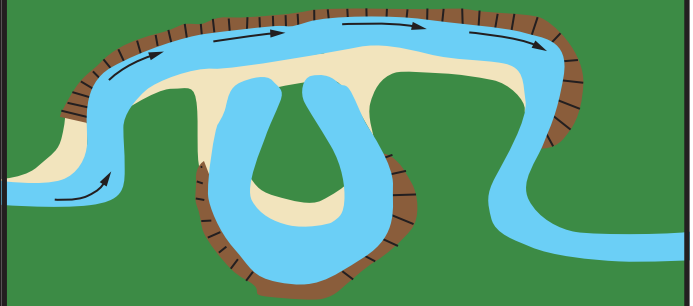
The river continues to erode and deposit material. Eventually the curves of the river channel become very close.



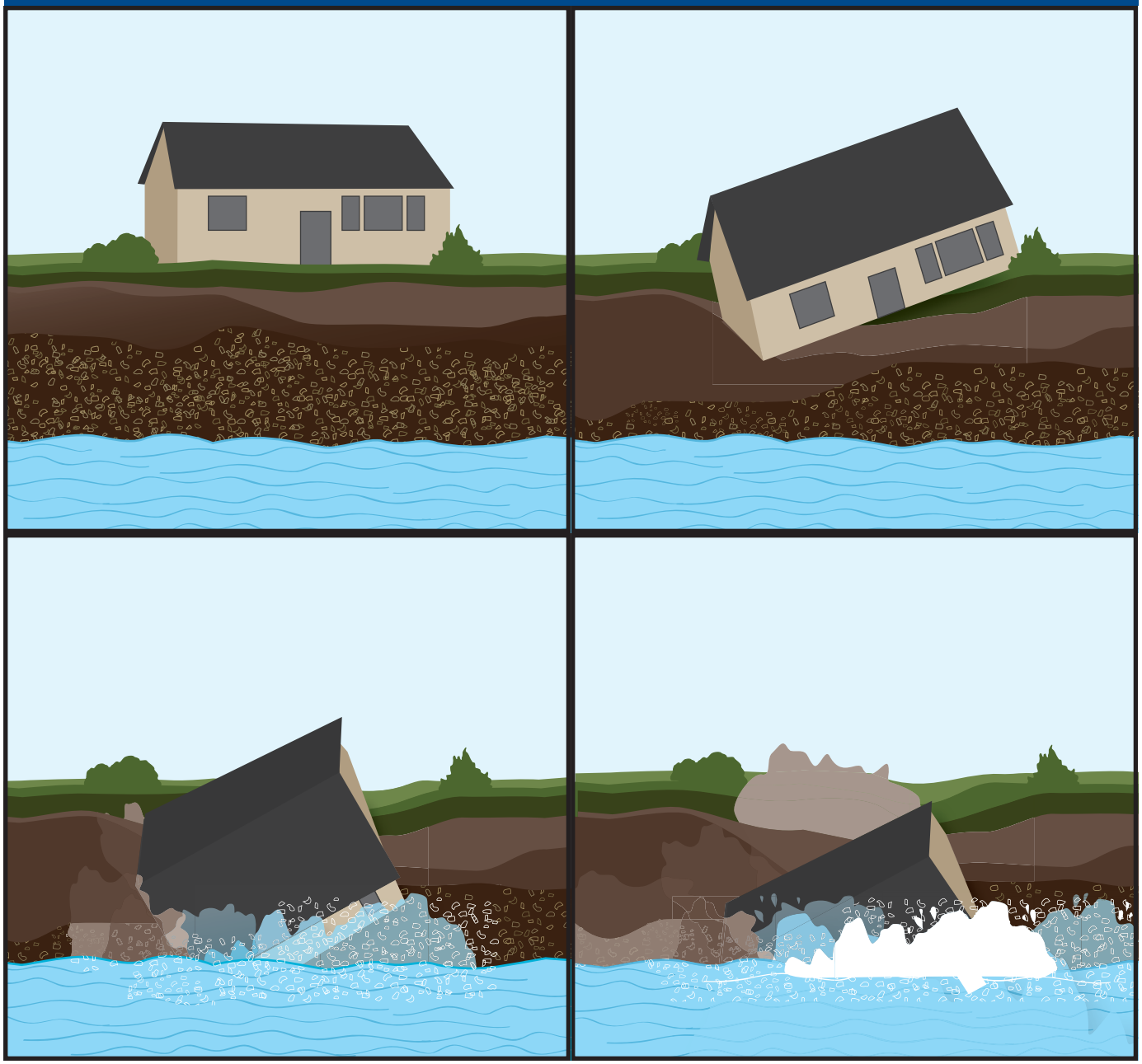
The river breaks through this thin barrier. The water no longer flows round the meander but straight along the new channel.



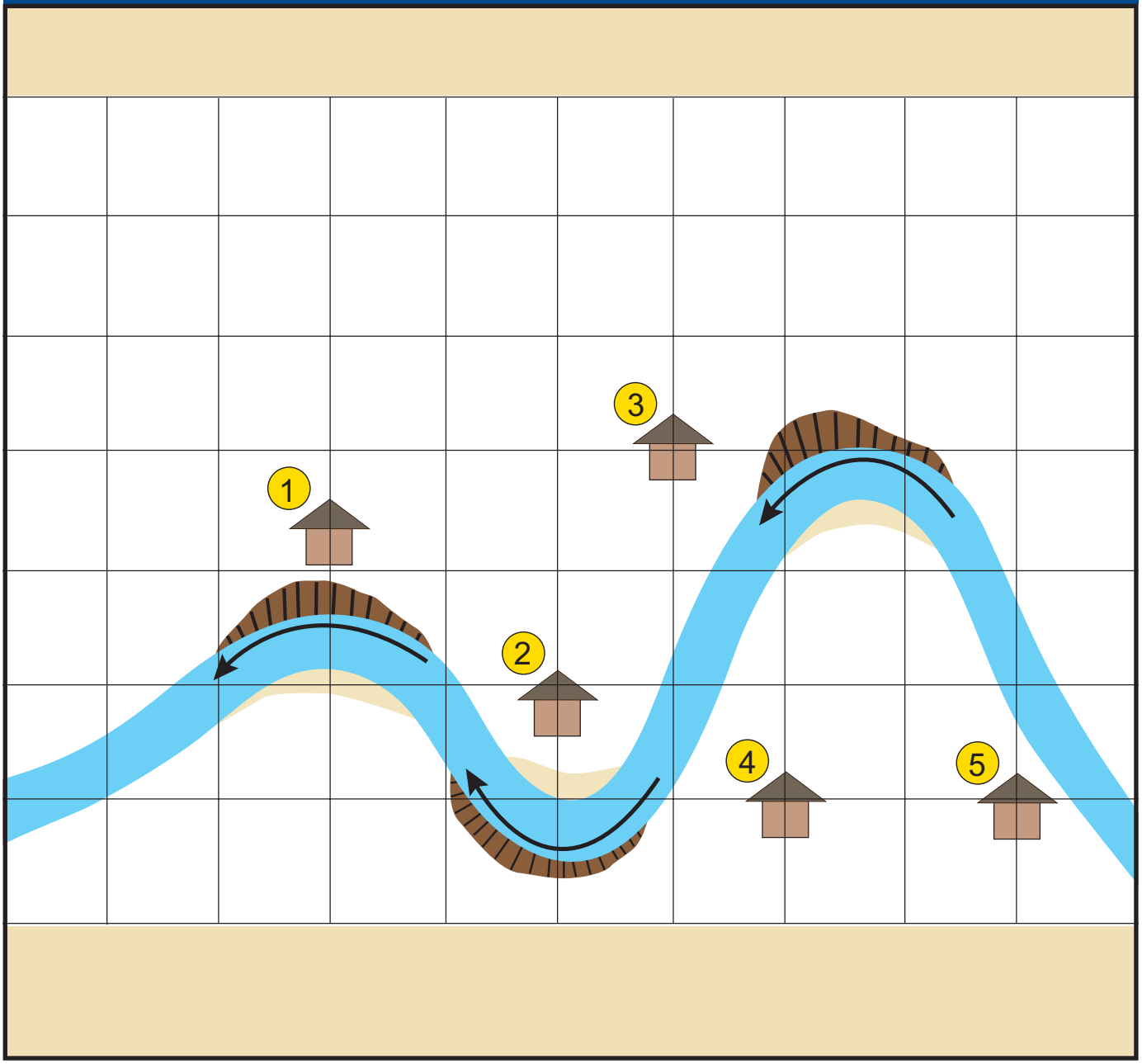
The old course of the river channel becomes an oxbow lake. This lake soon dries out.



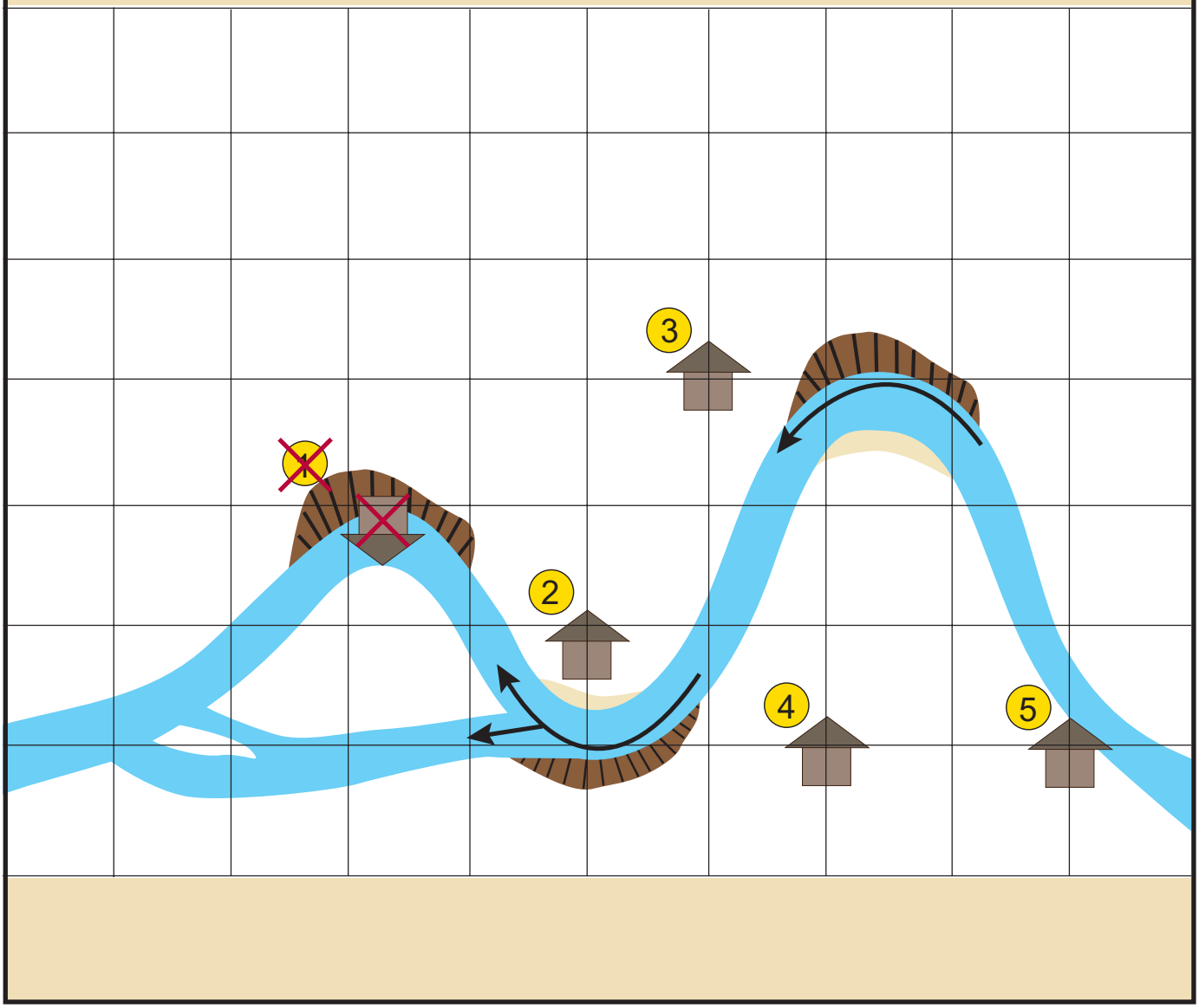
VA #13 House Falling into a River



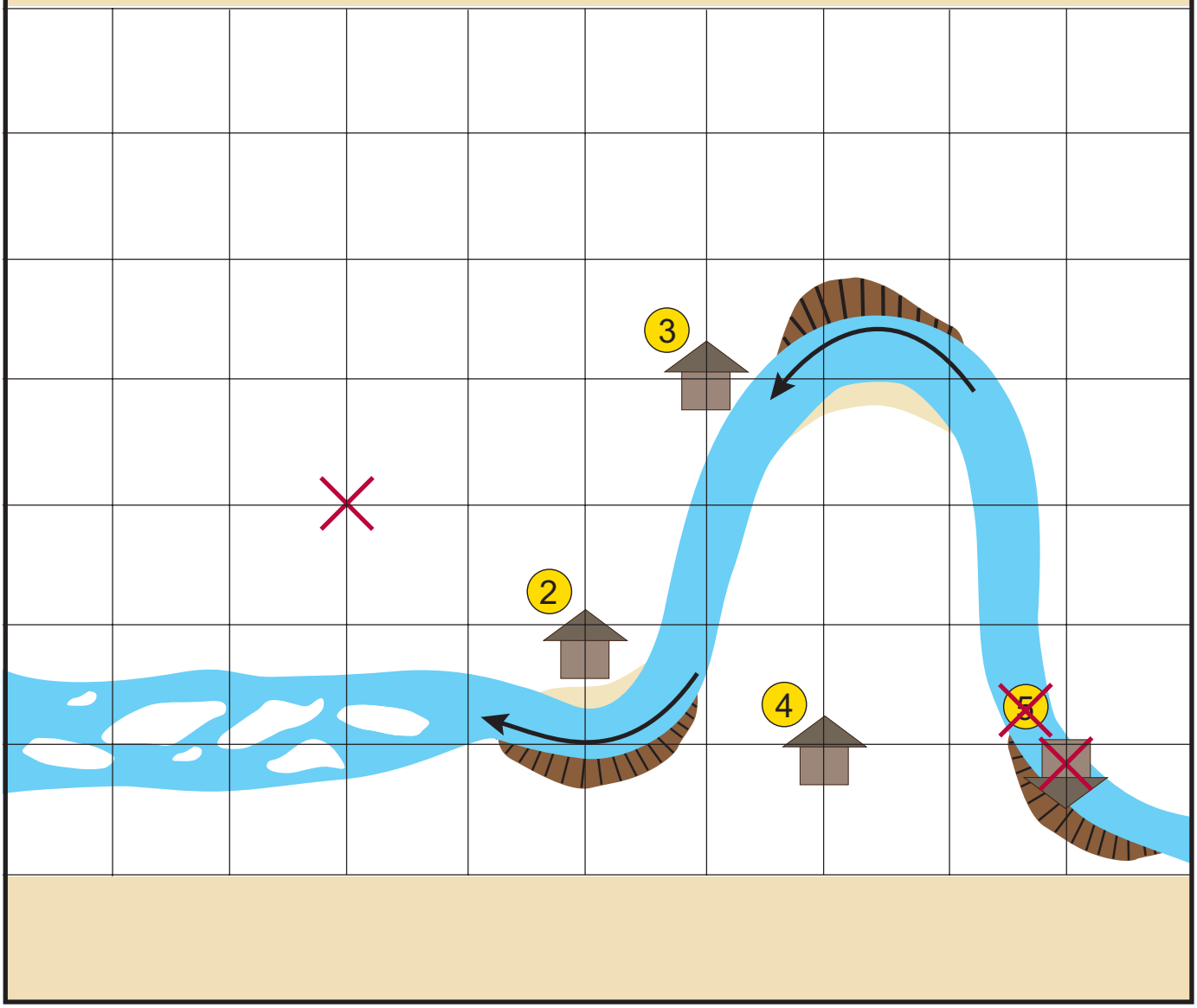
VA #14 Houses on the Floodplain: 1960



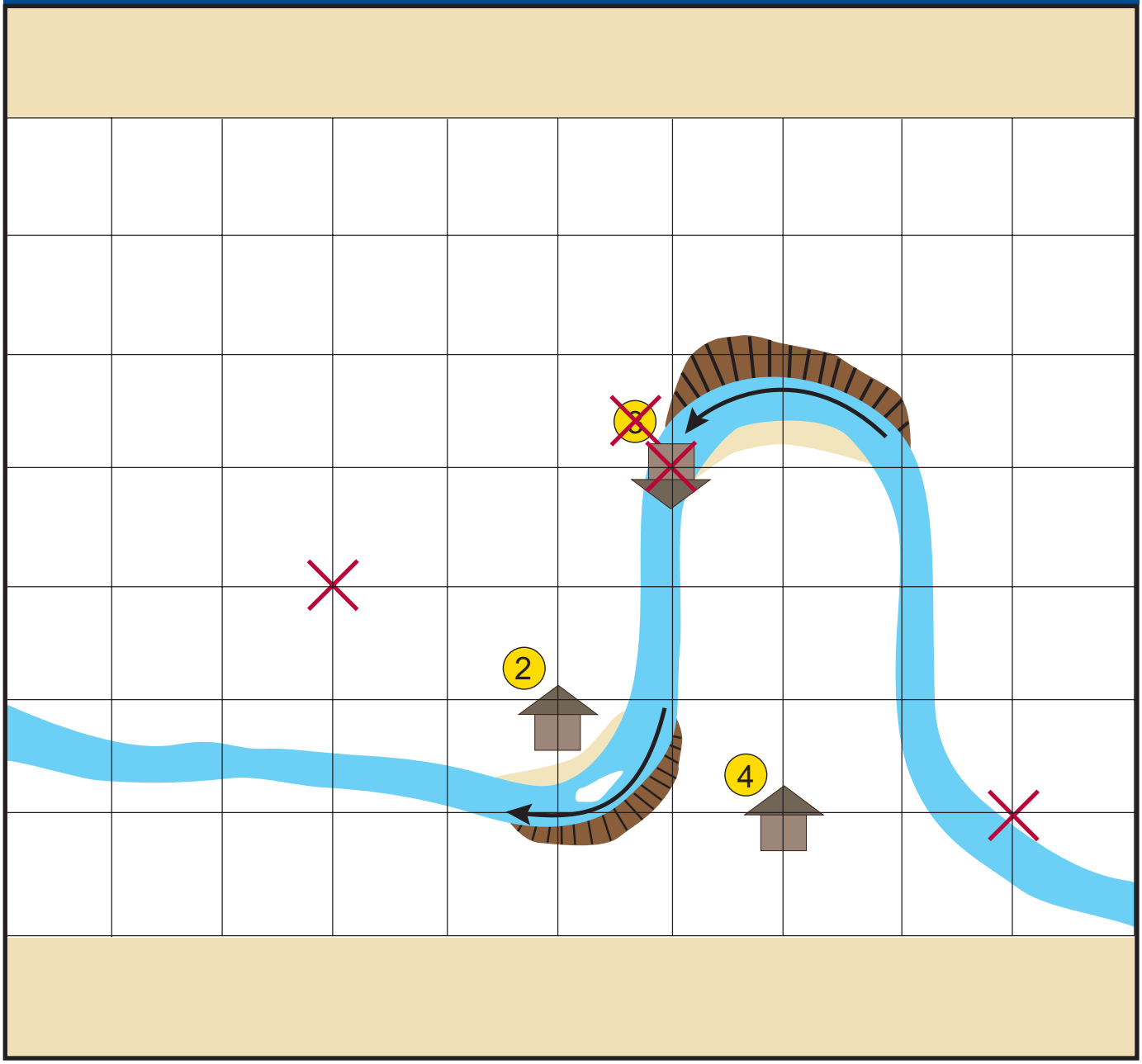
VA #15 Houses on the Floodplain: 1965



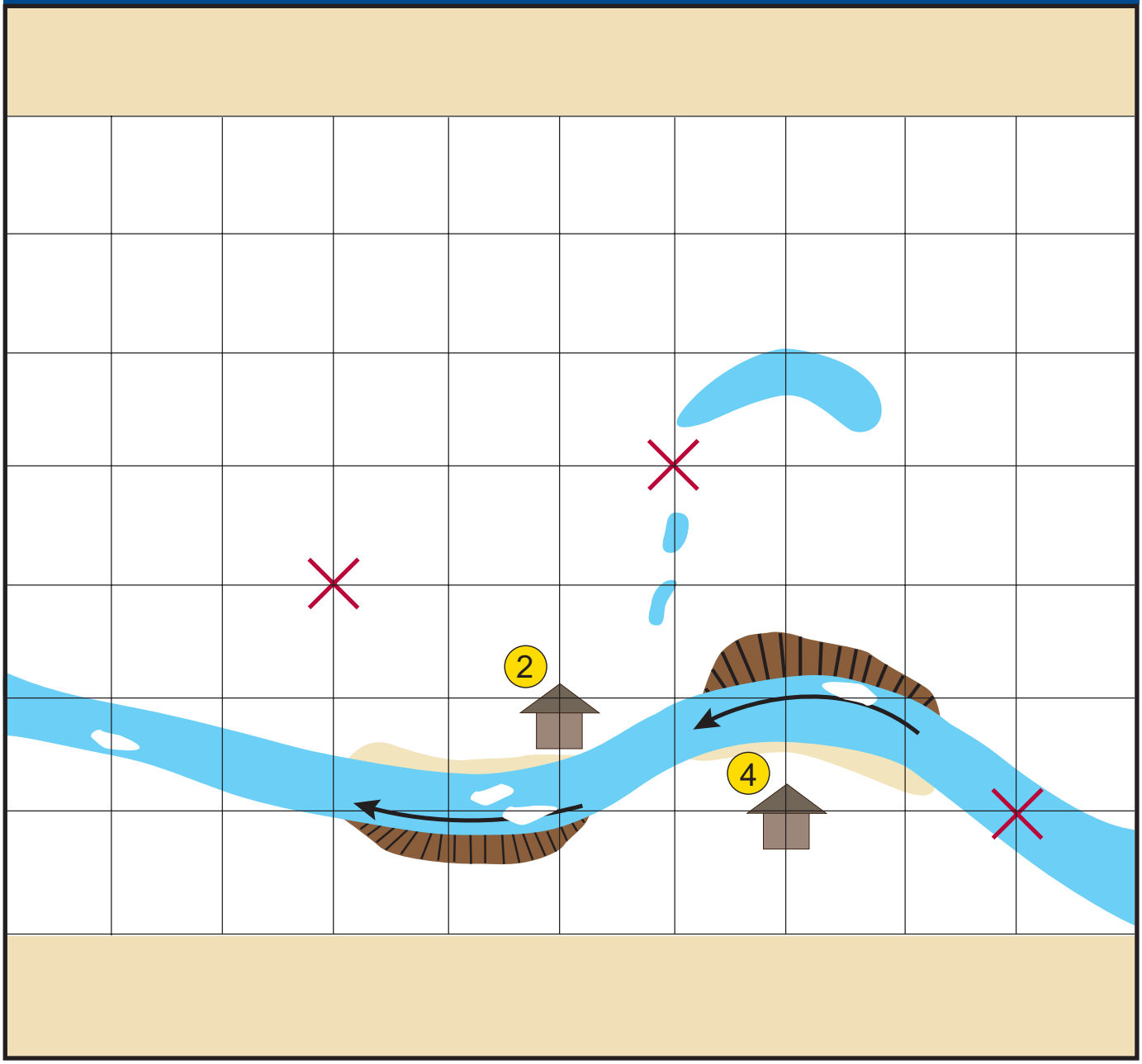
VA #16 Houses on the Floodplain: 1970



VA #17 Houses on the Floodplain: 1975



VA #18 Houses on the Floodplain: 1980



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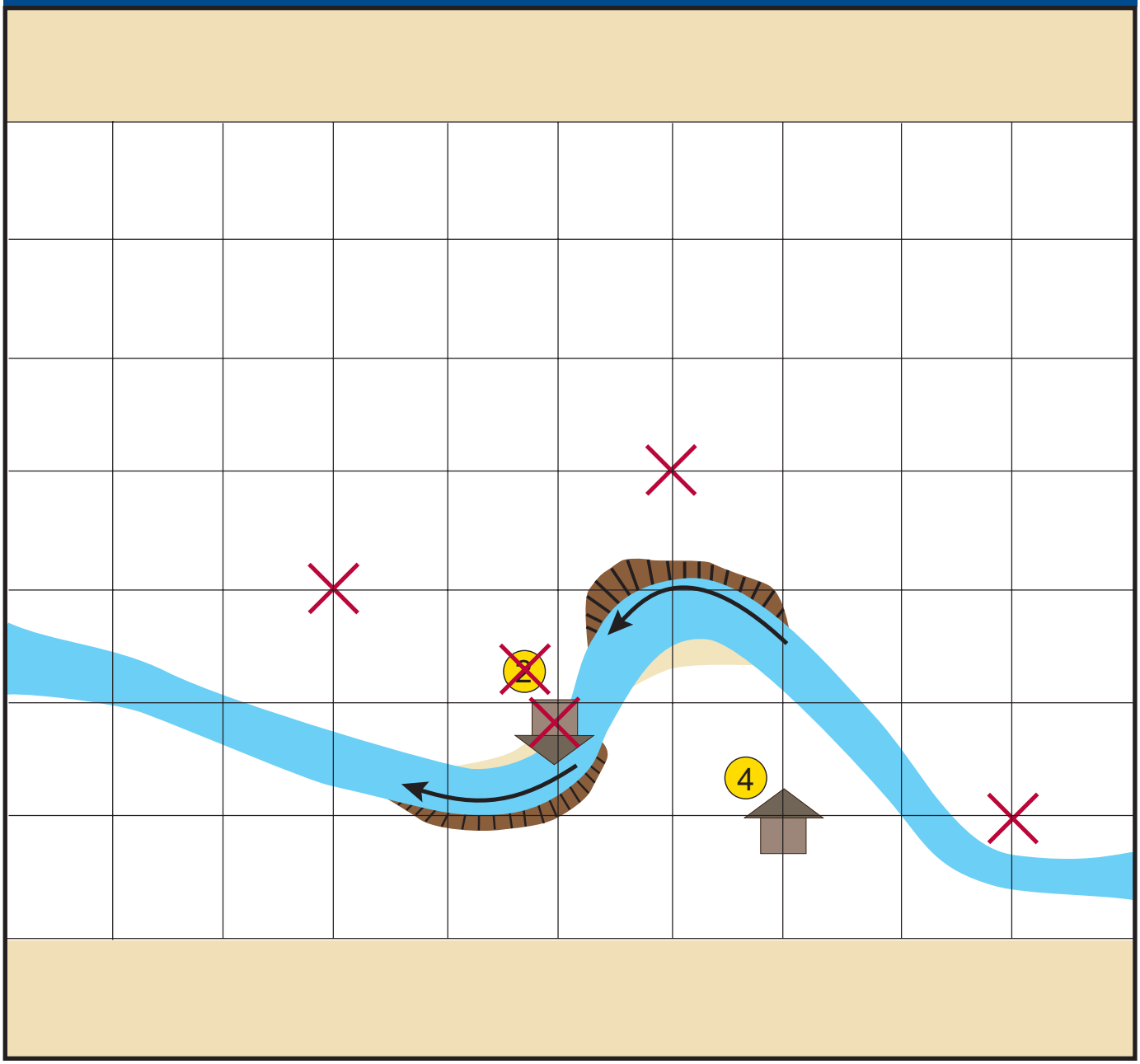
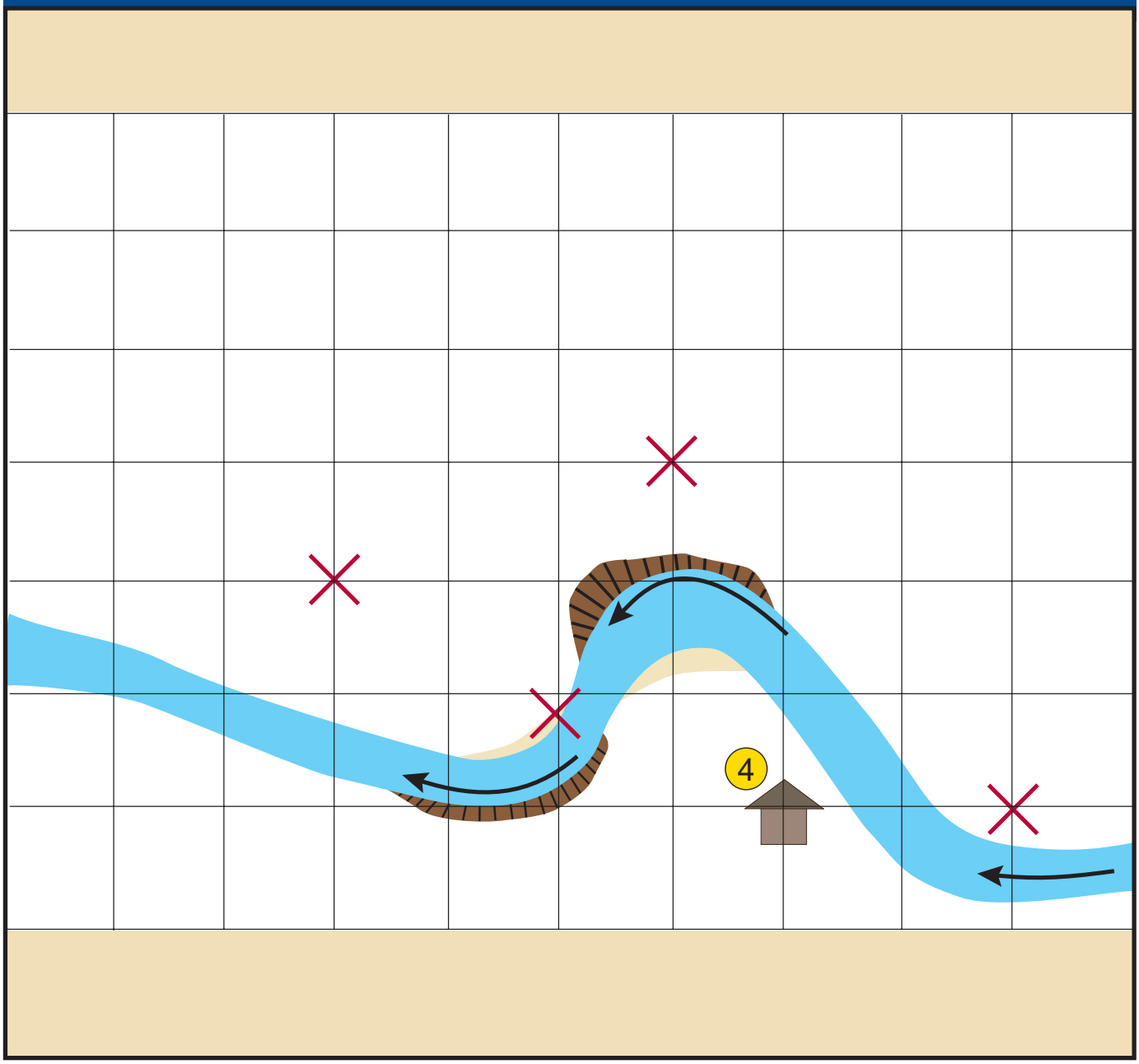


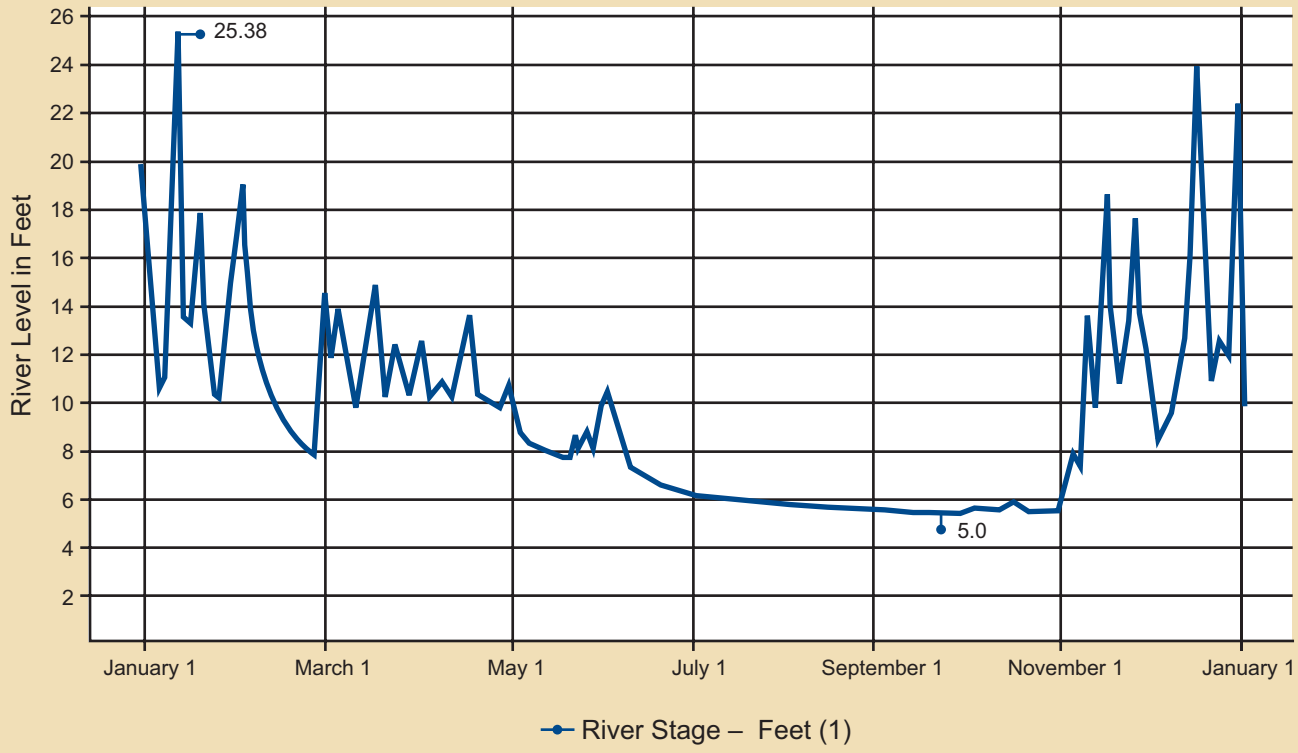
VA #20 Houses on the Floodplain: 1990



VA #21 Flow in Two California Rivers: Smith Data

Smith River near Crescent City

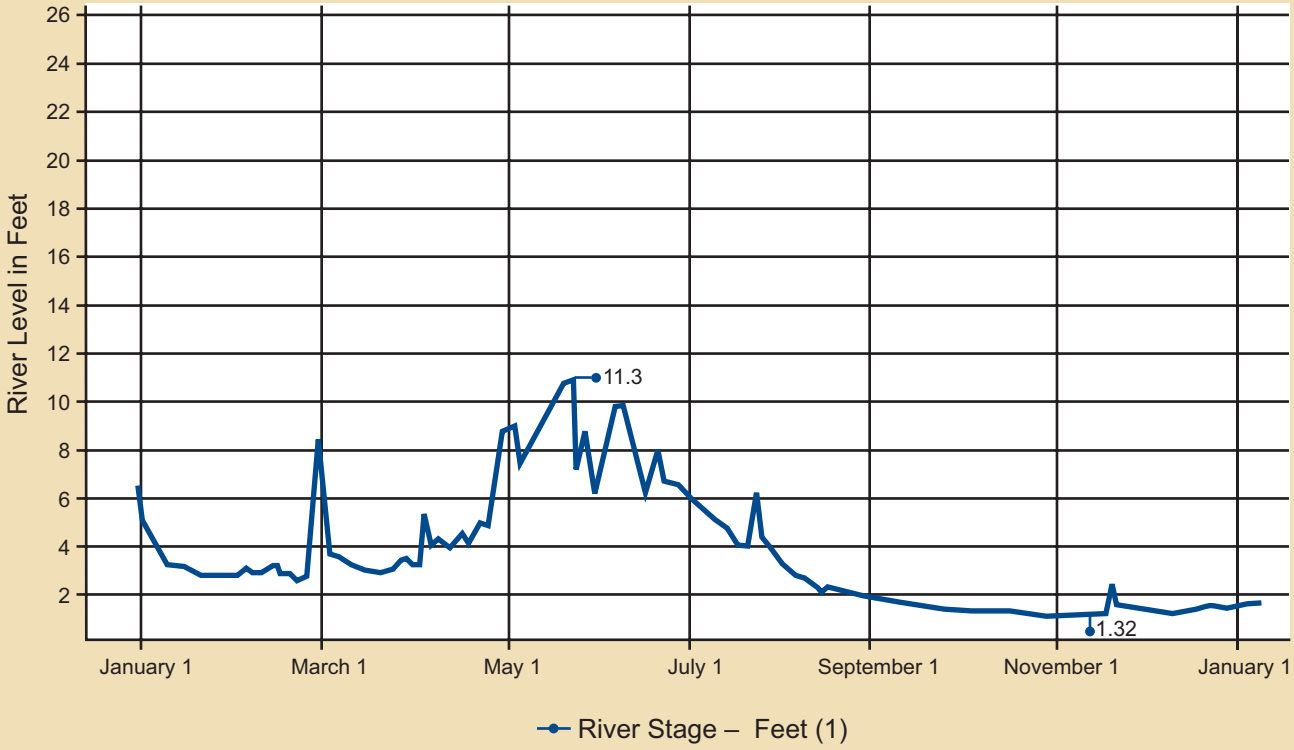
Data from January 1, 2006, through January 1, 2007. Duration: 366 days
Max. of period: (Jan. 11, 2006, 00:45, 25.38 feet) Min. of period: (Sept. 17, 2006, 16:00, 5.0 feet)



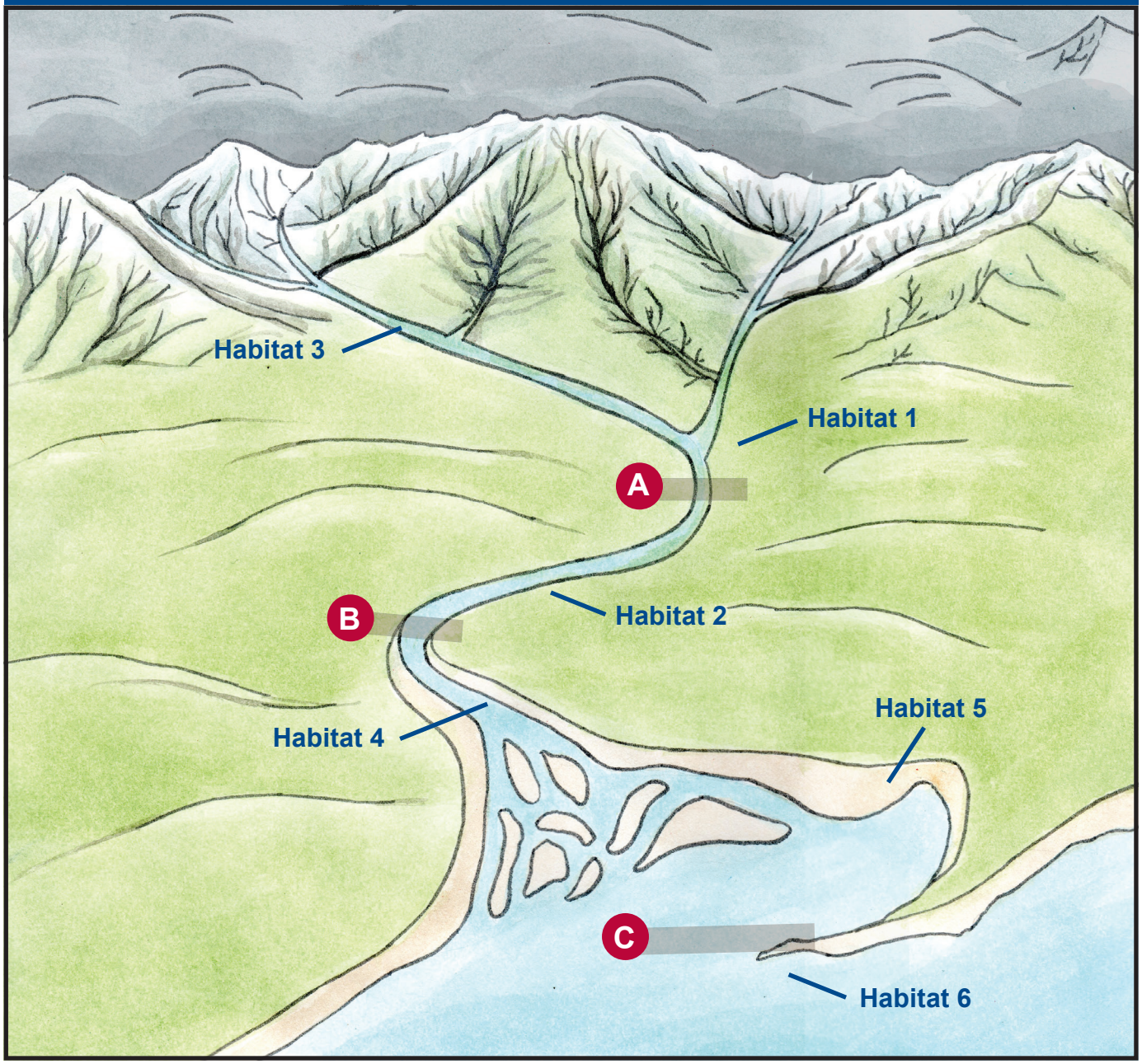
VA #22 Flow in Two California Rivers: Merced Data

Merced River at Pohono Bridge

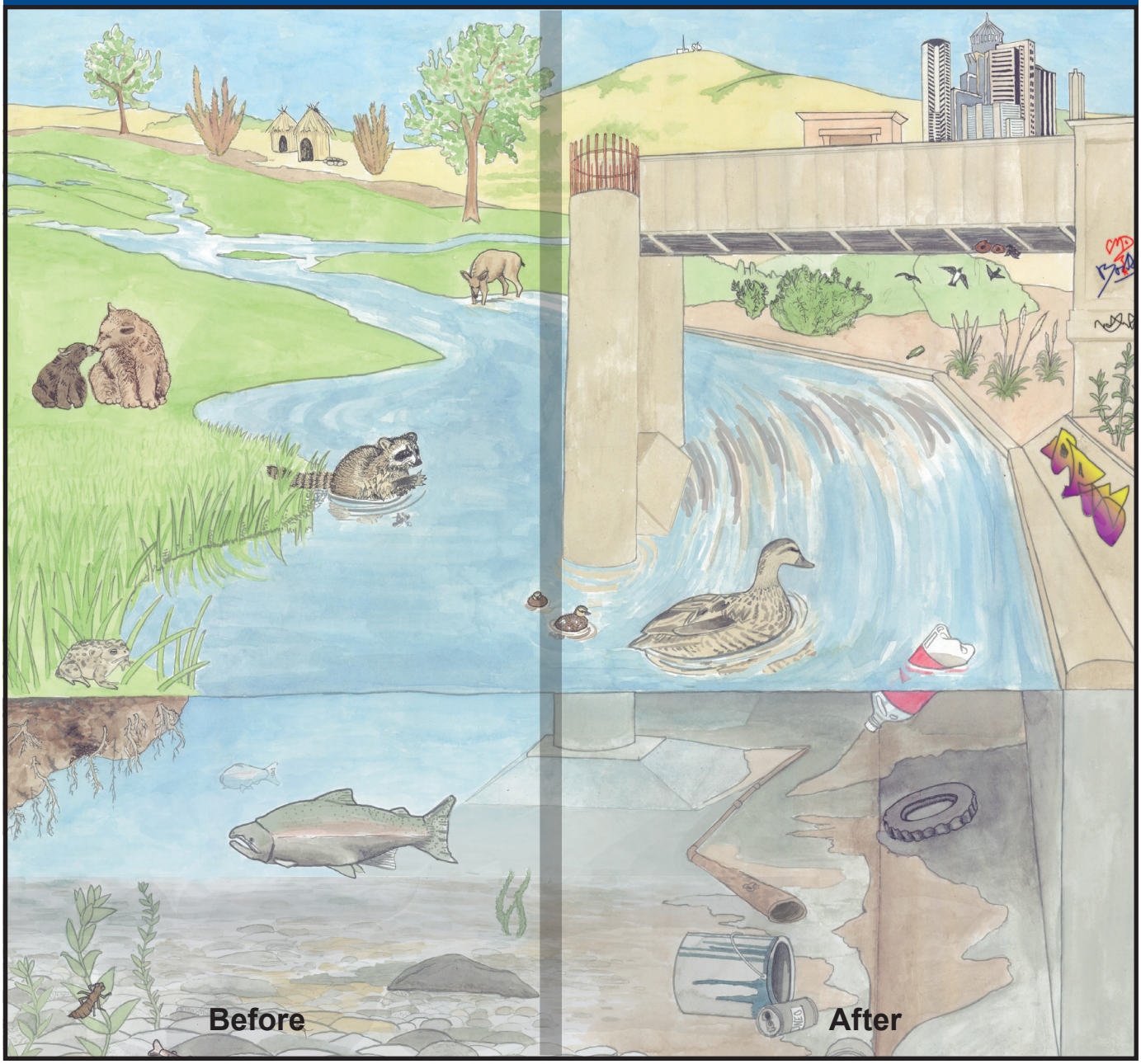
Data from January 1, 2006, through January 1, 2007. Duration: 366 days
Max. of period: (May 17, 2006, 12:16, 11.3 feet) Min. of period: (Nov. 7, 2006, 8:15, 1.32 feet)

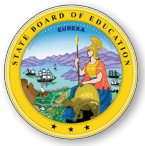


VA #23 River Map



VA #24 The Los Angeles River Before and After





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